

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview and email with Shannen Delaney, Reg. No. 61,605.

The application has been amended as follows:

IN THE CLAIMS:

Please write the claims to read as follows:

1. - 35. (Cancelled)

36. (Currently Amended) A method, comprising:

detecting a failure of a primary virtual port on a physical port of a first server, wherein the primary virtual port has an identity;

activating a secondary virtual port on the physical port of the first server, the physical port configured to support two or more virtual ports that share the physical port;

configuring the secondary virtual port with the identity of the failed primary virtual port by setting a node name of the secondary virtual port to a node name of the primary virtual port, wherein the node name is unique to the first server, and setting a port name of the secondary virtual port to a port name of the primary virtual port; and

servicing one or more storage devices owned by the first server through the secondary virtual port on the first server.

37. (Previously Presented) The method of claim 36, wherein detecting the failure is in response to initiating a failover procedure during a scheduled maintenance on the first server.

38. (Currently Amended) The method of claim 36, wherein detecting a failure in the first server further comprises: detecting a lack of a heartbeat signal from the first server at a second server.

39. (Previously Presented) The method of claim 36, further comprising:

determining that the primary virtual port has been recovered;

terminating service requests to the secondary virtual port;

deactivating the secondary virtual port; and
servicing the storage devices owned by the first server through the primary virtual port.

40. (Currently Amended) A computer readable medium including program instructions when executed operable to:

detecting a failure of a primary virtual port on a physical port of a first server, wherein the primary virtual port has an identity;

activating a secondary virtual port on the physical port of the first server, the physical port configured to support two or more virtual ports that share the physical port;

configuring the secondary virtual port with the identity of the failed primary virtual port by setting a node name of the secondary virtual port to a node name of the primary virtual port, wherein the node name is unique to the first server, and setting a port name of the secondary virtual port to a port name of the primary virtual port; and

servicing one or more storage devices owned by the first server through the secondary virtual port on the first server.

41. (Cancelled)

42. (Currently Amended) The method of claim 36 wherein the storage network comprises a Fibre Channel (FC) network and wherein the node name comprises a FC World Wide Node Name.

43. (Currently Amended) The method of claim 36 further comprising processing, by the first server, data access requests directed to the secondary virtual port.

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44. (Currently Amended) The method of claim 43 further comprising processing, by the first server, data access requests directed to a third virtual port, the third virtual port also associated with the physical port.

45. (New) The method of claim 36, wherein the secondary virtual port is in standby mode prior to the failure on the primary virtual port.

46. (Cancelled)

47. (Currently Amended) The computer readable medium of claim 40 wherein the storage network comprises a Fibre Channel (FC) network and wherein the node name comprises a FC World Wide Node Name.

48. (Currently Amended) The computer readable medium of claim 40 further comprising processing, by the first server, data access requests directed to the secondary virtual port.

49. (Currently Amended) The computer readable medium of claim 48 further comprising processing, by the storage server, data access requests directed to a third virtual port, the third virtual port is associated with the physical port.

50. (Previously Presented) The computer readable medium of claim 40, wherein the secondary virtual port is in standby mode prior to the failure on the primary virtual port.

51. (Cancelled)

52. (Currently Amended) A storage server, comprising

a physical port configured to communicate with a client over a network;

a plurality virtual ports associated with the physical port, wherein there is at least one primary virtual port and a secondary virtual port; and

a storage operating system executed by a processor, the processor configured to: (i) detect a failure in the primary virtual port, the primary virtual port having an identity, (ii) in response to detecting the failure, activate the secondary virtual port, (iii) configure the secondary virtual port with the identity of the failed primary virtual port by setting a node name of the secondary virtual port to a node name of the primary virtual port, wherein the node name is unique to the first server, and setting a port name of the secondary virtual port to a port name of the primary virtual port, and (iv) service one or more storage devices owned by the storage server through the secondary virtual port on the storage server.

53. (Previously Presented) The storage server of claim 52, wherein the secondary virtual port is in standby mode prior to the failure on the primary virtual port.

54. (Cancelled)

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

Renumbered independent claims 1, 9 and 14 among other things teach detecting a failure of a primary virtual port on a physical port of a first server, activating a second virtual port on the same physical port, the physical port configured to support two or more virtual ports, configuring the second virtual port on the second server with the identify of the failed primary virtual port but setting node names and port names and then servicing one or more storage devices owned by the first server through the secondary virtual port within a storage arena network in a computing environment.

The main reason for allowance in conjunction with all the other claim limitations in a computer networking environment.

The prior art does not teach the cited limitation.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

CORRESPONDANCE INFORMATION

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin R. Bruckart whose telephone number is (571) 272-3982. The examiner can normally be reached on 9:00-5:30PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner
Art Unit 2146

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